

Dear Sir:

I have a few comments on CAPTEL that I would like for the FCC to consider before this service is implemented on a large scale. I am a research scientist and have have been involved investigating and testing Automated Speech Recognition (ASR) systems for the deaf and hard of hearing for four years. I am deaf myself and have used CAPTEL and other ASR systems. CAPTEL is a fantastic development BUT it needs to be done right. I am concerned that the vendor will sell it as 'magic box' and consumers will not understand the limitations. My main concern is that the consumer needs to learn about the limitations of CAPTEL before it is deployed on a widespread basis.

1) I strongly support CAPTEL and believe the FCC should support it as a TRS service. However, there are several issues that must be addressed before it is approved for nationwide use. These issues are outlined below.

2) The error rate of CAPTEL should be assessed by an independent party that understands automated speech recognition and how it will be used. The error rate should be measured using real world speech and real world speech rates. I think the error rate should be assessed before CAPTEL is allowed to go nationwide.

3) It should be made clear to consumers that CAPTEL does have some limitations and these limitations should be spelled out explicitly. For example, if the ASR software makes multiple sequential mistakes (e.g. when the speaker uses technical terms) then the agent must correct each mistake. This will take longer than if the agent typed the speech without ASR. Because of this possibility the consumer should have the option of asking the agent to turn OFF the ASR and type each word manually. This option is also needed for emergency calls where you can't afford to make any mistakes at all. The consumer MUST be able to control this feature. It is not acceptable to tell the consumer to call back with regular relay. The consumer might be in the middle of an emergency phone call and redialing might cause unacceptable delay.

4) I think that the CAPTEL agent should be able to interrupt the conversation if needed and ask the speaker to slow down. If the agent does not have this capability then the captioned conversation may lag behind the speaker and confuse both parties.

5) I believe that this will require a new set of rules for quality assessment. Simply measuring transmission speed (words per min) will not be adequate. Automated speech recognition can often times have a low error rate but still introduce significant comprehension problems. The reason for this is because the errors for a regular relay are almost random in nature, however, the errors for automated speech recognition are clearly not random. Dysfluencies (sounds like umm, ahh, hmmm) are likely to introduce errors in adjoining words and homonyms are likely to cause errors. This will happen even if the agent is trained to correct the errors because human agents are not perfect and correcting rapid speech on the fly is a challenging job. The new assessment tools must measure comprehension levels as well as simple word error rates.

6) CAPTEL agent training must be monitored and agent performance must be measured. As stated above simply measuring transmission speed of the agent

is not adequate assurance for overall quality.

I would like to reiterate that I am strongly in favor of approving CAPTEL but that I think there needs to be more emphasis on consumer education for this technology before nationwide deployment.

Thanks for your consideration.

David Coco, Ph.D.

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